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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DAVIS, TEMICA M

ART UNIT PAPER NUMBER

2681

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14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/413,036

Applicant(s)

GANDHI ET AL.

Examiner

Temica M. Davis

Art Unit

2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-8, 11-17, 20-24 and 27-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-8, 11-17, 20-24 and 27-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Allowable Subject Matter

2. The indicated allowability of claims 45-47, 49-52, 54 and 55 is withdrawn in view of the newly discovered reference(s) to Larijani et al, U.S. Patent No. 6,603,746.
Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 4, 5, 11-14, 16, 17, 20, 21, 27-29, 31-41, 43-46, 48, 49, 51, 53, 54 and 56-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Larijani et al (Larijani), U.S. Patent No. 6,603,746.

Regarding claims 17 and 39, Larijani discloses a power control system/method for generating transmit power adjust commands in a wireless communications network, comprising: detection means for detecting interference conditions; and generating means for generating power adjust commands when said detection means detects an increased interference condition (col. 3, lines 12-25); and converting means for converting power up-adjust commands to power down-adjust commands when the detection means detects an increased interference condition and a duration of said detected increased interference condition does not exceed a first time threshold (col. 9, lines 22-63).

Regarding claims 33 and 36, Larijani discloses a method for generating transmit power adjust commands in a wireless communications network comprising: detecting interference conditions (col. 3, lines 12-35); selecting a first power control scheme when said detecting step does not detect an increased interference condition (col. 9, lines 27-37); selecting a second power control scheme when said detecting step detects an increased interference condition (col. 9, lines 47-63); and generating power adjust commands based on the selected power control scheme; and converting power up-adjust commands to power down-adjust commands when detecting an increased interference condition and a duration of said detected increased interference condition does not exceed a first time threshold (col. 9, lines 22-63).

Regarding claims 4 and 20, Larijani discloses the method/system of claims 17 and 39, further comprising comparing a signal-to-interference measurement for a mobile with a target signal-to-interference level for the mobile; generating a power

Art Unit: 2681

down-adjust command when the signal-to-interference measurement for the mobile is greater than the target signal-to-interference level for the mobile; and determining whether to generate a power down-adjust command when the signal-to-interference measurement for the mobile is less than the target signal-to-interference level for the mobile (col. 8, lines 58-65, col. 9, lines 47-63).

Regarding claims 5 and 21, Larijani discloses the method/system of claims 4 and 20, wherein said determining step determines whether to generate a power down-adjust command when the signal-to-interference measurement for the mobile is less than the target signal-to-interference level for the mobile based on a statistical probability (col. 8, lines 58-65, col. 9, lines 47-63).

Regarding claims 11 and 27, Larijani discloses the system/method of claims 5 and 21 wherein the statistical probability is variable (col. 8, lines 58-65, col. 9, lines 47-63).

Regarding claims 12 and 28, Larijani discloses the system/method of claims 7 and 23, wherein the statistical probability is variable (col. 8, lines 58-65, col. 9, lines 47-63).

Regarding claims 13 and 29, Larijani discloses the method/system of claims 39 and 17 wherein said detecting step monitors changes in total reverse link signal strength at a base station (col. 4, lines 57-65, col. 8, lines 31-32 col. 11, lines 29-43).

Regarding claims 14 and 32, Larijani discloses the method/system of claims 39 and 17, wherein said detecting step monitors absolute total reverse link signal strength (col. 4, lines 57-65, col. 8, lines 31-32 col. 11, lines 29-43).

Regarding claims 16 and 31, Larijani discloses the method/system of claims 39 and 17, wherein said detecting step monitors signal-to-interference levels inherently for a plurality of mobiles since it is known that multiple mobile stations communicate in a wireless system (col. 4, lines 57-61).

Regarding claims 34 and 37, Larijani discloses the method/system of claims 33 and 36, wherein the second power control scheme is a modified reverse inner loop power control scheme (col. 11, lines 29-44).

Regarding claims 35 and 38, Larijani discloses the method/system of claims 33 and 36, wherein the second power control scheme is a modified reverse outer loop power control scheme (col. 10, lines 13-24).

Regarding claim 40, Larijani discloses the method of claim 39, wherein the converting is based upon statistical probabilities (col. 8, lines 58-65, col. 9, lines 47-63).

Regarding claim 41, Larijani discloses the method of claim 39, wherein the converting converts a percentage of power up-adjust commands to power down-adjust commands (i.e., there are inherently a certain number up commands and down commands) (col. 8, lines 31-44).

Regarding claim 43, Larijani discloses the method of claim 41, further comprising dynamically modifying the percentage (based on the measured interference, there is a possibility that more up commands are given than down commands and vice versa (col. 8, lines 31-44)).

Regarding claim 44, Larijani discloses the method of claim 43, wherein the dynamically modifying comprises: adjusting the percentage based upon at least one of

(i) a level of the increased interference condition and (ii) a duration of the increased interference condition (col. 8, lines 31-44).

Regarding claim 45, Larijani discloses the method of claim 39, further comprising: modifying a number of the power up-adjust commands converted to power down-adjust commands in the converting step when the duration of the detected increased interference condition exceeds the first time threshold and does not exceed a second time threshold (T_{max}) (col. 8, lines 45-65).

Regarding claim 46, Larijani discloses the method of claim 45, wherein the number is a percentage value and the modifying step comprises: adjusting the percentage value based upon at least one of (i) a level of the increased interference condition and (ii) a duration of the increased interference condition (col. 8, lines 31-44).

Regarding claim 48, Larijani discloses the power control system of claim 17, wherein the converting means is configured to convert a percentage of the power up-adjust commands to power down-adjust commands and dynamically modify the percentage (col. 8, lines 31-44).

Regarding claim 49, Larijani discloses the power control system of claim 48, wherein the converting means is configured to modify a number of the power up-adjust commands converted to power down-adjust commands when the duration of the detected increased interference condition exceeds the first time threshold and does not exceed a second time threshold (T_{max}) (col. 8, lines 45-65).

Regarding claims 51 and 54, Larijani discloses the method/system of claims 33 and 53, further comprising modifying a number of the power up-adjust commands converted to power down-adjust commands in the converting step when the duration of the detected increased interference condition exceeds the first time threshold and does not exceed a second time threshold (col. 8, lines 45-65).

Regarding claim 53, Larijani discloses the power control system of claim 36, wherein the converting means is configured to convert a percentage of the power up-adjust commands to power down-adjust commands and dynamically modify the percentage (col. 8, lines 31-44).

Regarding claims 56-59, Larijani discloses the system/method of claims 17, 33, 36 and 39 wherein the detection means for detecting interference conditions uses the first time threshold and a second time threshold (col. 8, line 45-col. 9, line 37).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 42, 47, 50, 52 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larijani in view of well known prior art.

Regarding claim 42, Larijani discloses the method of claim 41 as described above. Larijani, however, fails to disclose wherein the percentage amount is predetermined.

The examiner, however contends that at the time of invention, such a feature would have been obvious to a person of ordinary skill in the art since such a technique is used in helping to maintain accuracy in system capacity (since system capacity is linked to the amount of interference, and ultimately to the transmit power of communicating mobiles.

Regarding claims 47, 50, 52 and 55, Larijani discloses the method/system of claims 45, 48, 51 and 53. Larijani, however, fails to disclose the method/system further comprising performing one of (i) a handdown operation and (ii) switching to a different transmit/receive frequency channel when the duration of the detected increased interference condition exceeds the second time threshold.

The examiner contends, however, that at the time of invention such a feature would have been obvious to a person of ordinary skill in the art for the purpose of attempting to receive a better quality channel.

7. Claims 6-8 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larijani in view of Chheda et al (Chheda), U.S. Patent No. 6,181,738.

Regarding claims 6 and 22, Larijani discloses the method/system of claims 39 and 17 as described above. Larijani, however, fails to disclose, further comprising: generating power adjust commands based on a comparison of a signal-to-interference

measurement for a mobile and a target signal-to-interference level for the mobile; judging whether an erasure frame has been received for the mobile; and determining whether to adjust the target signal-to-interference level for the mobile when an erasure frame has been received for the mobile.

In a similar field of endeavor, Chheda discloses reverse link power control using a frame quality metric. Chheda further discloses generating power adjust commands based on a comparison of a signal-to-interference measurement for a mobile and a target signal-to-interference level for the mobile; judging whether an erasure frame has been received for the mobile; and determining whether to adjust the target signal-to-interference level for the mobile when an erasure frame has been received for the mobile (col. 2, lines 52-57, col. 2, line 64-col. 3, line 10).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Larijani with the teachings of Chheda for the purpose of maximizing reverse link performance when interference is present (Chheda, col. 2, lines 20-25).

Regarding claims 7 and 23, the combination of Larijani and Chheda discloses the method/system of claims 6 and 22, wherein said determining step determines whether to adjust the target signal-to-interference level for the mobile when an erasure frame has been received for the mobile based on a statistical probability (Chheda, col. 2, lines 52-57, col. 2, line 64-col. 3, line 10 and col. 6, lines 35-46 and col. 9, lines 39-67).

Regarding claims 8 and 24, the combination of Larijani and Chheda discloses the method/system of claims 4 and 20, comprising: judging whether an erasure frame has been received for the mobile; and determining whether to adjust the target signal-to-

Art Unit: 2681

interference level for the mobile when an erasure frame has been received for the mobile (Chheda, col. 2, line 64-col. 3, line 18).

8. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larijani in view of Padovani, U.S. Patent No. 6,192,249.

Regarding claims 15 and 30, Larijani discloses the method/system of claims 39 and 17 as described above. Larijani, however, fails to disclose wherein said detecting step monitors a ratio of power up-adjust commands to total power adjust commands.

In a similar field of endeavor, Padovani discloses a method and apparatus for reverse link loading estimation. Padovani further discloses wherein a detecting step monitors a ratio of power up-adjust commands to total power adjust commands (col. 11, line 45-col. 12, line 57).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Larijani with the teachings of Padovani for the purpose of monitoring the loading conditions of the system in order to further reduce or prevent interference (Padovani, col. 12, lines 47-58).

Conclusion


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Davis whose telephone number is (703) 306-5837. The examiner can normally be reached Monday-Friday (alternate Fridays) from 9:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erika Gary can be reached on (703) 308-0123. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Temica M. Davis
Examiner
Art Unit 2681

April 28, 2004



TEMICA M. DAVIS
PATENT EXAMINER